

Remarks

Applicants respectfully request reconsideration of the above referenced application in light of the Remarks that follow. Claims 1-40 are now pending in this application.

In the Final Office Action dated December 1, 2006, the Examiner withdrew the objection to Claim 13. The Examiner is thanked for withdrawing this objection. The Examiner also rejected claims 1-40 under 35 U.S.C. 103(a) as being unpatentable over Michaud et al. (U.S. Patent No. 6,003,018, hereinafter "Michaud") in view of Ricketts et al. (U.S. Patent Application Publication No. 2005/0137963, hereinafter "Ricketts.") Applicants respectfully traverse this rejection.

The Applicants' Remarks, set forth below, are preceded by related comments of the Examiner set forth in small indented bold-faced type.

Claim Rejections – 35 USC § 103

Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michaud et al., U.S. Patent #6003018, in view of Ricketts et al, U.S. Patent Application Publication #20050137963.

Final Office Action, page 2.

Applicants respectfully traverse the Examiner's rejection. As the MPEP recites:

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

MPEP § 2142.

Applicants respectfully submit that the Examiner has not established a prima facie case of obviousness because there is no motivation to modify or combine the reference teachings and even if the references were combined, none of the prior art references, alone or in combination, describe or suggest all of the claimed limitations of the present invention.

(a) Even if the references were combined, none of the prior art references, alone or in combination, describe or suggest all of the claimed limitations of the present invention:

Even if Michaud and Ricketts were combined, none of the references, alone or in combination, describe or suggest all of the claimed limitations of at least the independent claims of the present invention: claims 1 and 21.

As recited by the MPEP:

"The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done." To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)."

MPEP § 2142.

With regards to Michaud, the Examiner states:

With regards to Claims 1, 21, Michaud teaches the method and program code comprising:

- a) assigning a covariance matrix composed of a variance for each of the instruments and a correlation matrix to the universe; (Col. 5, line 37 – Col. 6, line 16)
- b) removing one of the instruments from the universe; (Col. 3, lines 36-58)
- c) calculating a residual variance for each of the instruments remaining in the universe; (Col. 1, line 65 – Col. 2, line 8)
- d) calculating a residual variance for the universe based on the residual variance for each of the instruments and the correlation matrix; (Col. 1, line 65 – Col. 2, Line 8)
- e) reinstating the instrument into the universe; (Col. 5, lines 8-36)
- f) repeating steps b-e for each instrument in the universe; (Col. 5, lines 8-36)
- g) inserting into the index the one of the instruments for which the residual variance of the universe is minimized; (Col. 5, line 37 – Col. 6, line 16)
- h) eliminating from the universe the one of the instruments for which the residual variance of the universe is minimized; and (Col. 5, line 37 – Col. 6, line 16)
- i) repeating steps b-h until the index is formed. (Col. 5, line 37 – Col. 6, line 16)

Final Office Action, page 4.

Applicants respectfully disagree with the Examiner's assertion that Michaud teaches the claim limitations of claims 1 and 21 recited above.

As an initial matter, Michaud and Applicants address different and unrelated problems. Michaud is concerned with selecting a portfolio of assets that is efficient in terms of risk and return. As stated in Michaud: "[t]he present invention relates to a method for selecting a portfolio of tangible or intangible assets subject to optimization criteria yielding an enhanced mean-variance efficiency" (Michaud, col. 1, lines 9-12.) As stated therein, Michaud's methodology involves "comparing [an] existing portfolio with a portfolio from [a] resampled efficient frontier characterized by a specific risk objective for determining a preferred portfolio" (Michaud, col. 8, lines 1-4.) Also, "[i]n particular, an existing portfolio may be found to be consistent, in a statistical sense, with MV efficiency and thus not to require optimization, thereby potentially and advantageously saving transaction costs associated with revision of a portfolio" (Michaud, col. 3, line 66 – col. 4, line 3.)

Applicants' claimed invention, on the other hand, is not concerned with creating an efficient portfolio in terms of mean-variance, but rather with finding a portfolio that is most reflective of a particular universe of assets. Michaud does not attempt to create a portfolio reflective of some universe of assets. The reference in Michaud's Background section to "benchmark optimization" is not related to the present invention's objective of finding a portfolio that is most reflective of a particular universe of assets. Michaud in particular states:

Referring to FIG. 1B, a variation of classical Markowitz MV efficiency often used is benchmark optimization. In this case, the expected residual return α relative to a specified benchmark is considered as a function of residual return variance ω , defined as was the portfolio standard deviation σ but with respect to residual risk. An investor with portfolio A desires to optimize expected residual return at the same level ω_A of residual risk. As before, an efficient frontier 10 is defined as the locus of all portfolios having a maximum expected residual return α of each of all possible levels of portfolio residual risk.

Michaud, col. 1, line 65 - col. 2, line 8.

Thus, Michaud's objective is to optimize expected residual return for a given level of residual risk, and not—as in the present invention—to find an index most reflective of a particular universe of instruments.

More importantly, the methodology used by Michaud to address the problem he is concerned with is different from that used by Applicants'. With regards to steps b-i of claims 1 and 21, the present invention follows a methodology of exhaustive searching to find the best candidate asset (e.g., security or instrument) to be included in the portfolio (which ultimately will be reflective of the larger universe). As part of the methodology of this exhaustive search, one of the instruments is removed from the universe before calculating a residual variance for the universe (which for this purpose does not include the removed instrument) (steps (c) and (d.)) The removed instrument is then reinstated to the universe (step (e)) and a different instrument is removed from the universe before again calculating a residual variance (step (f.)) This is an exhaustive search trying to identify which instrument results in minimizing the residual variance of the universe (steps (g) and (h.))

Michaud does not remove (and then reinstate) instruments from a universe as part of an exhaustive search. The cited portion of Michaud describes “resampling” which is an unrelated concept. Resampling relates to recalculating the efficient frontier based on different input parameters. Michaud states:

For a given set of input data characterizing the universe of assets to be considered to comprise a portfolio, and for a given set of constraints on the makeup of the portfolio, an MV efficient frontier may be calculated, using standard techniques discussed above. Since the input data are of a statistical nature (i.e., characterized by means with associated variances and other statistical measures), the input data may be resampled, by simulation of optimization input parameters in a manner statistically consistent with the first set of data....Based on the resampled data the MV efficient portfolios may be recalculated, subject to the same constraints as applied in the initial solution. In this manner, as shown in FIG. 2, a set 12 of statistically equivalent MV efficient portfolios may be calculated.

Michaud, col. 3, lines 44-63.

The exhaustive search of the present invention to find the best candidate to be included in the portfolio is not the same as “resampling” as described in Michaud.

The exhaustive search methodology of the present invention also involves calculating a “residual variance” of the universe (each time one of the instruments is removed). The term “residual return variance” as used in Michaud (col. 2, lines 1-3) has a different meaning. Michaud describes an expected residual return α relative to a specified benchmark. Michaud states that this expected residual return is considered as a function of “residual return variance ω , defined as was the portfolio standard deviation σ but with respect to a residual risk.” Accordingly, “residual return variance” in Michaud relates to a residual risk of the portfolio relative to some benchmark. This concept is not the same as “residual variance” in the present invention which is the adjusted variance after removing one instrument from the universe.

For at least the foregoing reasons, the present invention and Michaud are directed to entirely different methodologies with different objectives. Applicants respectfully submit that for at least the reason that Michaud does not teach or suggest the limitations of claims 1 and 21, as claimed by the Examiner, even if Michaud and Ricketts were combined, their combination would not render Applicants’ claimed invention obvious. The mere combination of the concept of an index, with a portfolio optimization method does not render Applicants’ index selection method obvious.

(b) There is no motivation to modify or combine the reference teachings:

Applicants respectfully submit that the Examiner has not demonstrated that there is “some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings” (MPEP § 2142)

The MPEP states:

“There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the arts.” In re Rouffet, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998).

MPEP § 2143.01.

None of these three possible sources have been demonstrated by the Examiner in the Final Office Action. Neither Michaud nor Ricketts provide a suggestion or motivation to combine each other. The only grounds offered by the Examiner for combining the cited references are:

Michaud statistical analysis is based on selecting instruments in order to achieve a portfolio reflective of an overall market. Although the principles are similar to those of the applicant, it is clear that Michaud fails to teach an index per se. However, the of selecting a representative index is old and well known, and is demonstrated by Ricketts at (Page 1, Para. 5) which discusses using statistical analysis of the stocks, individually and collectively, to form a subset index. As such, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to combine the teachings of Michaud, related to selection of a portfolio of instruments based on residual variance, with the teachings of Ricketts, related to constructing a market index from statistical information. The motivation for such a combination is to give a macro-view of market movement to an individual to achieve micro-level investing. In this way, investors can make better informed decisions, leading to increased use in the system.

Final Office Action, page 4-5.

Applicants respectfully submit that the Examiner's conclusion is based on incorrect premises. Applicants respectfully disagree with the Examiner's statement that "Michaud statistical analysis is based on selecting instruments in order to achieve a portfolio reflective of an overall market." Michaud is not concerned with achieving a portfolio reflective of an overall market. Michaud is concerned with achieving an optimized portfolio in terms of mean-variance efficiency. In other words, Michaud is concerned with achieving a portfolio that maximizes the yielded profit and minimizes the risk for an investor.

Applicants also respectfully disagree with the Examiner's statement that "[a]lthough the principles are similar to those of the applicant, it is clear that Michaud" As discussed earlier, the principles of Michaud's method are not similar to those of Applicants' claimed invention.

Because Applicants' claimed invention is concerned with finding a portfolio that is most reflective of a particular universe of assets, Michaud would be of no help to one of skill in the art to arrive at Applicants' claimed invention. Therefore, Applicants respectfully submit that one of skill in the art would have no motivation to combine Michaud and Ricketts.

Thus, Applicants respectfully submit that it would have not been obvious to combine Michaud – a system for portfolio mean-variance efficiency optimization by means of resampled frontiers – with Ricketts – a system for determining investor participation driven stock purchase indices. The undersigned respectfully submits that a conclusion of the “obviousness” should be supported by some objective evidence. However, the Examiner has provided no objective support for his conclusion.

Where the Examiner’s combination requires that the cited references be modified to support the Examiner’s claims of obviousness, the Examiner’s burden is greater and there must be some objective reason to combine the teachings of the references. See MPEP § 2143.01.

A statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993); see also In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000) (Court reversed obviousness rejection involving technologically simple concept because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention); Al-Site Corp. v. VSI Int’l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide the suggestion to combine references.)

MPEP § 2143.01 (emphasis added.)

The undersigned respectfully suggests that the Examiner has not demonstrated any of the three possible sources for a motivation to modify the Michaud reference with Ricketts, whether in the nature of the problem to be solved, the teachings of the prior art, or the knowledge of persons of ordinary skill in the arts.

Thus, the Examiner’s conclusion that it would have been obvious to one of ordinary skill in the art is unsupported by the cited Michaud and Ricketts references. In fact, the undersigned respectfully suggests that the Examiner could not find such motivation because the cited references are not directed to the subject matter of the claimed invention.

Applicants respectfully submit that for the foregoing reasons, neither Michaud nor Ricketts alone or in combination, expressly or impliedly suggest the claimed invention. Applicants also respectfully submit that for the foregoing reasons the Examiner has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. Therefore, the Examiner's rejection is respectfully traversed. The undersigned respectfully requests that the Examiner either withdraw his rejection of the claims or provide some objective evidence of a teaching found in the prior art to make the combination made by the Examiner.

Thus, and in further light of the above, Applicants respectfully submit that independent claims 1 and 21 are distinguishable over Michaud in view of Ricketts, and notice to the effect that these claims are in condition for immediate allowance is respectfully requested.

Claims 2-20 depend from independent claim 1 and claims 22-40 depend from independent claim 21, and each defines further features and structure of the method and system. As such, these claims are patentable for the reasons noted above with respect to claims 1 and 21 as well as for the additional features recited therein. Accordingly, notice to the effect that dependent claims 2-20 and 22-40 are in condition for immediate allowance is respectfully requested.

With regards to the Official Notice that the Examiner had taken with respect to some elements of dependent claims 18-20 and 38-40, Applicants respectfully submit that such Official Notice was not specifically traversed as it pertained to dependent claims only. Applicants considered that such traversal would have been superfluous and unnecessary, since Applicants had traversed the independent claims these dependent claims depend from. Applicants respectfully maintain such position in response to the Final Office Action.

Claims 1-40 are now pending and believed to be in condition for allowance.

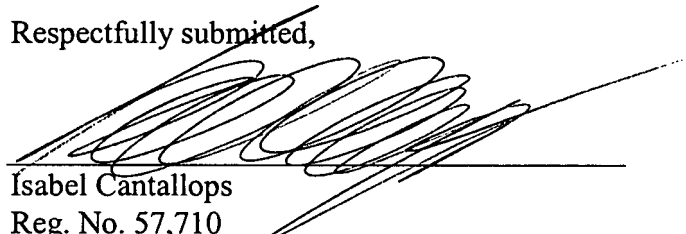
Closing

Claims 1-40 are pending and believed to be in condition for allowance. For the reasons set forth above, allowance of this application is courteously urged. If there remain any questions regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned at (212) 895-1376 in order for the undersigned to arrange for an interview with the Examiner.

The Commissioner is authorized to charge and fees required in connection with this submission to Deposit Account No. 50-0521.

Respectfully submitted,

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